

## Refine Search

### Search Results -

| Term   | Documents |
|--|-----------|
| (3 NOT 4).PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.    | 13        |
| (L3 NOT L4 ).PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD. | 13        |

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US Pre-Grant Publication Full-Text Database  
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 Derwent World Patents Index  
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Search:

L5

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### Search History

DATE: Wednesday, October 25, 2006   [Purge Queries](#)   [Printable Copy](#)   [Create Case](#)

**Set Name**   **Query**  
 side by side

**Hit Count**   **Set Name**  
 result set

DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; THES=ASSIGNEE; PLUR=YES;  
 OP=AND

|           |  |    |           |
|-----------|--|----|-----------|
| <u>L5</u> | L3 not L4                                    | 13 | <u>L5</u> |
| <u>L4</u> | L3 and ((methylophilic adj yeast) or Pichia) | 43 | <u>L4</u> |
| <u>L3</u> | L2 and (vector)                              | 56 | <u>L3</u> |
| <u>L2</u> | (mannosidase) and (OCH1)                     | 57 | <u>L2</u> |
| <u>L1</u> | Contreras-Roland.in.                         | 15 | <u>L1</u> |

END OF SEARCH HISTORY



Day : Wednesday

Date: 10/25/2006

Time: 16:13:54

## Inventor Name Search

Enter the **first few letters** of the Inventor's Last Name.  
Additionally, enter the **first few letters** of the Inventor's First name.

**Last Name****First Name**

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Day : Wednesday

Date: 10/25/2006

Time: 16:13:54

## Inventor Name Search

Enter the **first few letters** of the Inventor's Last Name.  
Additionally, enter the **first few letters** of the Inventor's First name.

**Last Name****First Name**

To go back use Back button on your browser toolbar.

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\*\*\* ANNOUNCEMENTS \*\*\*  
\*\*\*

## NEW FILES RELEASED

\*\*\*Verdict Market Research (File 769)  
\*\*\*EMCare (File 45)  
\*\*\*Trademarkscan - South Korea (File 655)  
\*\*\*Regulatory Affairs Journals (File 183)  
\*\*\*Index Chemicus (File 302)  
\*\*\*Inspec (File 202)

## RESUMED UPDATING

\*\*\*File 141, Reader's Guide Abstracts  
\*\*\*

## RELOADS COMPLETED

\*\*\*File 11, PsycInfo  
\*\*\*File 531, American Business Directory  
\*\*\* The 2005 reload of the CLAIMS files (Files 340, 341, 942)  
is now available online.  
\*\*\*

## DATABASES REMOVED

\*\*\*File 196, FINDEX  
\*\*\*File 468, Public Opinion Online (POLL)  
Chemical Structure Searching now available in Prous Science Drug  
Data Report (F452), Prous Science Drugs of the Future (F453),  
IMS R&D Focus (F445/955), Pharmaprojects (F128/928), Beilstein  
Facts (F390), Derwent Chemistry Resource (F355) and Index Chemicus  
(File 302).  
\*\*\*

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File 1:ERIC 1966-2006/Sep  
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| Set | Items | Description |
|-----|-------|-------------|
|-----|-------|-------------|

|     |       |       |
|-----|-------|-------|
| --- | ----- | ----- |
|-----|-------|-------|

Cost is in DialUnits  
?

B 155, 5, 73

|                  |            |  |
|------------------|------------|--|
| 25oct06 15:42:10 | User259876 | Session D937.1                               |
| \$0.81           | 0.232      | DialUnits File1                              |
| \$0.81           |            | Estimated cost File1                         |
| \$0.08           |            | INTERNET                                     |
| \$0.89           |            | Estimated cost this search                   |
| \$0.89           |            | Estimated total session cost 0.232 DialUnits |

SYSTEM:OS - DIALOG OneSearch

File 155:MEDLINE(R) 1950-2006/Oct 23  
(c) format only 2006 Dialog

File 5:Biosis Previews(R) 1969-2006/Oct W3

(c) 2006 The Thomson Corporation  
 File 73:EMBASE 1974-2006/Oct 25  
 (c) 2006 Elsevier B.V.

| Set | Items | Description |
|-----|-------|-------------|
| --- | ----- | -----       |

?

S (MANNOSIDASE) AND (OCH1)  
       8876 MANNOSIDASE  
       95 OCH1  
 S1      9 (MANNOSIDASE) AND (OCH1)

?

RD  
 S2      6 RD (unique items)

?

T S2/3,K/ALL

2/3,K/1 (Item 1 from file: 155)  
 DIALOG(R) File 155:MEDLINE(R)  
 (c) format only 2006 Dialog. All rts. reserv.

20732026 PMID: 16407250

**Functional characterization of the Hansenula polymorpha HOC1, OCH1, and OCR1 genes as members of the yeast OCH1 mannosyltransferase family involved in protein glycosylation.**

Kim Moo Woong; Kim Eun Jung; Kim Jeong-Yoon; Park Jeong-Seok; Oh Doo-Byoung; Shimma Yoh-ichi; Chiba Yasunori; Jigami Yoshifumi; Rhee Sang Ki; Kang Hyun Ah

Metabolic Engineering Laboratory, Korea Research Institute of Bioscience and Biotechnology, Daejeon 305-600, Korea.

Journal of biological chemistry (United States) Mar 10 2006, 281 (10) p6261-72, ISSN 0021-9258--Print Journal Code: 2985121R

Publishing Model Print-Electronic

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: MEDLINE; Completed

**Functional characterization of the Hansenula polymorpha HOC1, OCH1, and OCR1 genes as members of the yeast OCH1 mannosyltransferase family involved in protein glycosylation.**

The alpha-1,6-mannosyltransferase encoded by *Saccharomyces cerevisiae* OCH1 (ScOCH1) is responsible for the outer chain initiation of N-linked oligosaccharides. To identify the...

... functional analysis of three *H. polymorpha* genes, HpHOC1, HpOCH1, and HpOCR1, that belong to the OCH1 family containing seven members with significant sequence identities to ScOCH1. The deletions of these H...

... hypermannosylation. Although the apparent phenotypes of HpocrlDelta were most similar to those of *S. cerevisiae* och1 mutants, the detailed structural analysis of N-glycans revealed that the major defect of HpocrlDelta...

... the O-linked glycosylation of extracellular chitinase, representing HpOCR1 as a novel member of the OCH1 family implicated in both N- and O-linked glycosylation. In contrast, addition of the first...

... growth of its wild type under normal growth conditions. The complementation of the *S. cerevisiae* och1 null mutation by the expression of HpoCH1 and the lack of in vitro alpha-1...

... ScOCH1. The engineered HpoCH1Delta strain with the targeted expression of *Aspergillus saitoi* alpha-1,2- mannosidase in the endoplasmic reticulum was shown to produce human-compatible high mannose-type Man5GlcNAc2 oligosaccharide...

Chemical Name: Fungal Proteins; Membrane Glycoproteins; Membrane Proteins ; *Saccharomyces cerevisiae* Proteins; OCH1 protein, *S cerevisiae*; Glycosyltransferases; HOC1 protein; Mannosyltransferases; alpha 1,6-mannosyltransferase

**2/3,K/2 (Item 2 from file: 155)**

DIALOG(R) File 155:MEDLINE(R)

(c) format only 2006 Dialog. All rts. reserv.

14874056 PMID: 15128513

**In vivo synthesis of mammalian-like, hybrid-type N-glycans in *Pichia pastoris*.**

Vervecken Wouter; Kaigorodov Vladimir; Callewaert Nico; Geysens Steven; De Vusser Kristof; Contreras Roland

Department of Molecular Biomedical Research, Ghent University and Flanders Interuniversity Institute for Biotechnology, Ghent, Belgium.

Applied and environmental microbiology (United States) May 2004, 70

(5) p2639-46, ISSN 0099-2240--Print Journal Code: 7605801

Publishing Model Print

Document type: Evaluation Studies; Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: MEDLINE; Completed

... *pastoris* N-glycosylation pathway to produce nonhyperglycosylated hybrid glycans. This was accomplished by inactivation of OCH1 and overexpression of an alpha-1,2- mannosidase retained in the endoplasmic reticulum and N-acetylglucosaminyltransferase I and beta-1,4-galactosyltransferase retained...

**2/3,K/3 (Item 3 from file: 155)**

DIALOG(R) File 155:MEDLINE(R)

(c) format only 2006 Dialog. All rts. reserv.

14863028 PMID: 15033937

**Functional analysis of the ALG3 gene encoding the Dol-P-Man: Man5GlcNAc2-PP-Dol mannosyltransferase enzyme of *P. pastoris*.**

Davidson Robert C; Nett Juergen H; Renfer Eduard; Li Huijuan; Stadheim Terrance A; Miller Benton J; Miele Robert G; Hamilton Stephen R; Choi Byung-Kwon; Mitchell Teresa I; Wildt Stefan

Glycofi, Inc., 21 Lafayette Street Suite 200, Lebanon, NH 03766 Velocity 11; 435 Acacia Ave., Palo Alto, CA 94306, USA.

Glycobiology (England) May 2004, 14 (5) p399-407, ISSN 0959-6658--Print Journal Code: 9104124

Publishing Model Print-Electronic

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: MEDLINE; Completed

...Dol-PP to Man(6)GlcNAc(2)-Dol-PP. Deletion of this gene in an och1 mutant background resulted in the secretion of glycoproteins with a predicted Man(5)GlcNAc(2)...

...that could be trimmed to Man(3)GlcNAc(2) by in vitro alpha-1,2-mannosidase treatment. However, several larger glycans ranging from Hex(6)GlcNAc(2) to Hex(12)GlcNAc(2) were also observed that were recalcitrant to an array of mannosidase digests. These results contrast the far simpler glycan profile found in *Saccharomyces cerevisiae* alg3-1 och1, indicating diverging Golgi processing in these two closely related yeasts. Finally, analysis of the P...

2/3,K/4 (Item 1 from file: 5)

DIALOG(R)File 5:Biosis Previews(R)

(c) 2006 The Thomson Corporation. All rts. reserv.

0015065263 BIOSIS NO.: 200400436052

**Protein glycosylation modification in *Pichia pastoris***

AUTHOR: Contreras Roland (Reprint); Callewaert Nico L M; Geysens Steven C J

AUTHOR ADDRESS: Merelbeke, Belgium\*\*Belgium

JOURNAL: Official Gazette of the United States Patent and Trademark Office  
Patents 1287 (2): Oct. 12, 2004 2004

MEDIUM: e-file

PATENT NUMBER: US 6803225 PATENT DATE GRANTED: October 12, 2004 20041012

PATENT CLASSIFICATION: 435-2542 PATENT ASSIGNEE: Flanders Interuniversity  
Institute for Biotechnology, Zwijnaarde, Belgium PATENT COUNTRY: USA

ISSN: 0098-1133 (ISSN print)

DOCUMENT TYPE: Patent

RECORD TYPE: Abstract

LANGUAGE: English

...ABSTRACT: the present invention are capable of expressing either or both of an (alpha-1,2- mannosidase and glucosidase II. The genetically engineered strains of the present invention can be further modified such that the OCH1 gene is disrupted. Methods of producing glycoproteins with reduced glycosylation using such genetically engineered stains...

2/3,K/5 (Item 1 from file: 73)

DIALOG(R)File 73:EMBASE

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13866542 EMBASE No: 2006271736

**Functional characterization of the *Hansenula polymorpha* HOC1, OCH1, and OCR1 genes as members of the yeast OCH1 mannosyltransferase family involved in protein glycosylation**

Moo W.K.; Eun J.; Kim J.-Y.; Park J.-S.; Oh D.-B.; Shimma Y.-I.; Chiba Y.; Jigami Y.; Sang K.R.; Hyun A.K.

A.K. Hyun, Metabolic Engineering Laboratory, Korea Research Institute of Bioscience and Biotechnology, Oun-dong 52, Yusong-gu, Daejeon, 305-600 South Korea

AUTHOR EMAIL: hyunkang@kribb.re.kr

Journal of Biological Chemistry ( J. BIOL. CHEM. ) (United States) 10

MAR 2006, 281/10 (6261-6272)

CODEN: JBCHA ISSN: 0021-9258 eISSN: 1083-351X

DOCUMENT TYPE: Journal ; Article

LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

NUMBER OF REFERENCES: 36

**Functional characterization of the Hansenula polymorpha HOC1, OCH1, and OCRI genes as members of the yeast OCH1 mannosyltransferase family involved in protein glycosylation**

The alpha-1,6-mannosyltransferase encoded by *Saccharomyces cerevisiae* OCH1 (ScOCH1) is responsible for the outer chain initiation of N-linked oligosaccharides. To identify the...

...functional analysis of three *H. polymorpha* genes, HpHOC1, HpOCH1, and HpOCRI, that belong to the OCH1 family containing seven members with significant sequence identities to ScOCH1. The deletions of these H...

...hypermannosylation. Although the apparent phenotypes of HpocriDELTA were most similar to those of *S. cerevisiae* och1 mutants, the detailed structural analysis of N-glycans revealed that the major defect of HpocriDELTA...

...the O-linked glycosylation of extracellular chitinase, representing HpOCRI as a novel member of the OCH1 family implicated in both N- and O-linked glycosylation. In contrast, addition of the first...

...growth of its wild type under normal growth conditions. The complementation of the *S. cerevisiae* och1 null mutation by the expression of HpOCH1 and the lack of in vitro alpha-1...

...ScOCH1. The engineered Hpoch1DELTA strain with the targeted expression of *Aspergillus saitoi* alpha-1,2- mannosidase in the endoplasmic reticulum was shown to produce human-compatible high mannose-type ManSUB5GlcNAcSUB2 oligosaccharide...

**DRUG DESCRIPTORS:**

chitinase; fungal enzyme--endogenous compound--ec; oligosaccharide; alpha mannosidase ; unclassified drug

**MEDICAL TERMS (UNCONTROLLED):** och1 gene; hoc1 gene; ocrl gene

**CAS REGISTRY NO.:** 9055-06-5 (mannosyltransferase); 9001-06-3 (chitinase); 9025-42-7 (alpha mannosidase )

2/3,K/6 (Item 2 from file: 73)

DIALOG(R)File 73:EMBASE

(c) 2006 Elsevier B.V. All rts. reserv.

12648159 EMBASE No: 2004249027

**Functional analysis of the ALG3 gene encoding the Dol-P-Man:**

**ManSUB5GlcNAcSUB2-PP-Dol mannosyltransferase enzyme of *P. pastoris***

Davidson R.C.; Nett J.H.; Renfer E.; Li H.; Stadheim T.A.; Miller B.J.; Miele R.G.; Hamilton S.R.; Choi B.-K.; Mitchell I.T.; Wildt S.

S. Wildt, Glycofi Inc., 21 Lafayette Street, Lebanon, NH 03766 United States

AUTHOR EMAIL: swildt@glycofi.com

Glycobiology ( GLYCOBIOLOGY ) (United Kingdom) 2004, 14/5 (399-407)

CODEN: GLYCE ISSN: 0959-6658

DOCUMENT TYPE: Journal ; Article

LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

NUMBER OF REFERENCES: 37

...that converts ManSUB5-GlcNAcSUB2Dol-PP to ManSUB6GlcNAcSUB2-Dol-PP. Deletion of this gene in an och1 mutant background resulted in the secretion of glycoproteins with a predicted ManSUB5GlcNAcSUB2 structure that could be trimmed to ManSUB3GlcNAcSUB2 by in vitro alpha-1,2-mannosidase treatment. However, several larger glycans ranging from



HexSUB6GlcNACSUB2 to HexSUB12GcNACSUB2 were also observed that were recalcitrant to an array of mannosidase digests. These results contrast the far simpler glycan profile found in *Saccharomyces cerevisiae* alg3-1 och1, indicating diverging Golgi processing in these two closely related yeasts. Finally, analysis of the P...

DRUG DESCRIPTORS:

glycan derivative--endogenous compound--ec; glycoprotein--endogenous compound--ec; alpha mannosidase

CAS REGISTRY NO.: 55598-56-6 (dolichol phosphate mannose); 9055-06-5 (mannosyltransferase); 9025-42-7 (alpha mannosidase)

?

| Set | Items | Description              |
|-----|-------|--------------------------|
| S1  | 9     | (MANNOSIDASE) AND (OCH1) |
| S2  | 6     | RD (unique items)        |

?

S OCH1

S3 95 OCH1

?

S S3 AND ((METHYLOTROPHIC (W) YEAST) OR PICHIA)

95 S3

4100 METHYLOTROPHIC

307879 YEAST

1805 METHYLOTROPHIC(W) YEAST

11061 PICHIA

S4 12 S3 AND ((METHYLOTROPHIC (W) YEAST) OR PICHIA)

?

RD

S5 9 RD (unique items)

?

T S5/3,K/ALL

5/3,K/1 (Item 1 from file: 155)

DIALOG(R) File 155:MEDLINE(R)

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21799179 PMID: 16960330

**Molecular cloning and characterization of a *Pichia pastoris* ortholog of the yeast Golgi GDP-mannose transporter gene.**

Arakawa Kumiko; Abe Masato; Noda Yoichi; Adachi Hiroyuki; Yoda Koji

Department of Biotechnology, University of Tokyo, Japan.

Journal of general and applied microbiology (Japan) Jun 2006, 52 (3)

p137-45, ISSN 0022-1260--Print Journal Code: 0165543

Publishing Model Print

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: MEDLINE; Completed

**Molecular cloning and characterization of a *Pichia pastoris* ortholog of the yeast Golgi GDP-mannose transporter gene.**

...as recognized by a large number of Golgi marker proteins. In contrast, the Golgi of *Pichia pastoris* was reported to be organized in a small number of stacked cisternae located near...

... The tagged product in *P. pastoris* cell was observed in rod-like compartments in which Och1 mannosyltransferase was also found and the tER marker Sec12 and Sec13 proteins localized very close...

Descriptors: \*Carrier Proteins--genetics--GE; \*Pichia --genetics--GE

5/3,K/2 (Item 2 from file: 155)

DIALOG(R) File 155:MEDLINE(R)

(c) format only 2006 Dialog. All rts. reserv.

20732026 PMID: 16407250

**Functional characterization of the Hansenula polymorpha HOC1, OCH1, and OCR1 genes as members of the yeast OCH1 mannosyltransferase family involved in protein glycosylation.**

Kim Moo Woong; Kim Eun Jung; Kim Jeong-Yoon; Park Jeong-Seok; Oh Doo-Byoung; Shimma Yoh-ichi; Chiba Yasunori; Jigami Yoshifumi; Rhee Sang Ki; Kang Hyun Ah

Metabolic Engineering Laboratory, Korea Research Institute of Bioscience and Biotechnology, Daejeon 305-600, Korea.

Journal of biological chemistry (United States) Mar 10 2006, 281 (10)

p6261-72, ISSN 0021-9258--Print Journal Code: 2985121R

Publishing Model Print-Electronic

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: MEDLINE; Completed

**Functional characterization of the Hansenula polymorpha HOC1, OCH1, and OCR1 genes as members of the yeast OCH1 mannosyltransferase family involved in protein glycosylation.**

The alpha-1,6-mannosyltransferase encoded by *Saccharomyces cerevisiae* OCH1 (ScOCH1) is responsible for the outer chain initiation of N-linked oligosaccharides. To identify the genes involved in the first step of outer chain biosynthesis in the methylotrophic yeast *Hansenula polymorpha*, we undertook the functional analysis of three *H. polymorpha* genes, HpHOC1, HpOCH1, and HpOCR1, that belong to the OCH1 family containing seven members with significant sequence identities to ScOCH1. The deletions of these H...

...hypermannosylation. Although the apparent phenotypes of Hpocr1Delta were most similar to those of *S. cerevisiae* och1 mutants, the detailed structural analysis of N-glycans revealed that the major defect of Hpocr1Delta...

... the O-linked glycosylation of extracellular chitinase, representing HpOCR1 as a novel member of the OCH1 family implicated in both N- and O-linked glycosylation. In contrast, addition of the first...

... growth of its wild type under normal growth conditions. The complementation of the *S. cerevisiae* och1 null mutation by the expression of HpOCH1 and the lack of in vitro alpha-1...

...Descriptors: Proteins--metabolism--ME; \*Glycosyltransferases--genetics--GE; \*Mannosyltransferases--genetics--GE; \*Membrane Proteins--genetics--GE; \*Multigene Family; \*Pichia --genetics--GE...; Glycoproteins--chemistry--CH; Membrane Proteins--chemistry--CH; Membrane Proteins--physiology--PH; Molecular Sequence Data; Mutation; Pichia --enzymology--EN; Research Support, Non-U.S. Gov't; *Saccharomyces cerevisiae* Proteins--chemistry--CH; Sequence...

Chemical Name: Fungal Proteins; Membrane Glycoproteins; Membrane Proteins; *Saccharomyces cerevisiae* Proteins; OCH1 protein, *S. cerevisiae*;

Glycosyltransferases; HOC1 protein; Mannosyltransferases; alpha  
1,6-mannosyltransferase

**5/3,K/3 (Item 3 from file: 155)**

DIALOG(R) File 155:MEDLINE(R)

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14874056 PMID: 15128513

**In vivo synthesis of mammalian-like, hybrid-type N-glycans in *Pichia pastoris*.**

Vervecken Wouter; Kaigorodov Vladimir; Callewaert Nico; Geysens Steven;  
De Vusser Kristof; Contreras Roland

Department of Molecular Biomedical Research, Ghent University and  
Flanders Interuniversity Institute for Biotechnology, Ghent, Belgium.

Applied and environmental microbiology (United States) May 2004, 70  
(5) p2639-46, ISSN 0099-2240--Print Journal Code: 7605801

Publishing Model Print

Document type: Evaluation Studies; Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: MEDLINE; Completed

**In vivo synthesis of mammalian-like, hybrid-type N-glycans in *Pichia pastoris*.**

The *Pichia pastoris* N-glycosylation pathway is only partially homologous to the pathway in human cells. In the Golgi apparatus, human cells synthesize complex oligosaccharides, whereas *Pichia* cells form mannose structures that can contain up to 40 mannose residues. This hypermannosylation of...

... *pastoris* N-glycosylation pathway to produce nonhyperglycosylated hybrid glycans. This was accomplished by inactivation of OCH1 and overexpression of an alpha-1,2-mannosidase retained in the endoplasmic reticulum and N...

Descriptors: \*Genetic Engineering--methods--MT; \* *Pichia* --metabolism--ME; \*Polysaccharides--biosynthesis--BI...; Humans; Mannosidases--genetics--GE; Mannosidases--metabolism--ME; N-Acetylglucosaminyltransferases--genetics--GE; N-Acetylglucosaminyltransferases--metabolism--ME; *Pichia* --genetics--GE; *Pichia* --growth and development--GD; Polysaccharides--chemistry--CH; Recombinant Fusion Proteins--genetics--GE; Recombinant Fusion Proteins ...

**5/3,K/4 (Item 4 from file: 155)**

DIALOG(R) File 155:MEDLINE(R)

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14863028 PMID: 15033937

**Functional analysis of the ALG3 gene encoding the Dol-P-Man: Man5GlcNAc2-PP-Dol mannosyltransferase enzyme of *P. pastoris*.**

Davidson Robert C; Nett Juergen H; Renfer Eduard; Li Huijuan; Stadheim Terrance A; Miller Benton J; Miele Robert G; Hamilton Stephen R; Choi Byung-Kwon; Mitchell Teresa I; Wildt Stefan

Glycofi, Inc., 21 Lafayette Street Suite 200, Lebanon, NH 03766 Velocity  
11; 435 Acacia Ave., Palo Alto, CA 94306, USA.

Glycobiology (England) May 2004, 14 (5) p399-407, ISSN 0959-6658--  
Print Journal Code: 9104124

Publishing Model Print-Electronic

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NLM  
Record type: MEDLINE; Completed

...the Golgi, where additional but divergent processing occurs in mammals and fungi. We cloned the *Pichia pastoris* homolog of the ALG3 gene, which encodes the enzyme that converts Man(5)GlcNAc...

...Dol-PP to Man(6)GlcNAc(2)-Dol-PP. Deletion of this gene in an och1 mutant background resulted in the secretion of glycoproteins with a predicted Man(5)GlcNAc(2...

... digests. These results contrast the far simpler glycan profile found in *Saccharomyces cerevisiae* alg3-1 och1, indicating diverging Golgi processing in these two closely related yeasts. Finally, analysis of the P ...

...Descriptors: ME; \*Golgi Apparatus--metabolism--ME; \*Mannosyltransferases--genetics--GE; \*Membrane Proteins--genetics--GE; \*Oligosaccharides--metabolism--ME; \* *Pichia* --enzymology--EN; \**Saccharomyces cerevisiae* Proteins--genetics--GE...; metabolism--ME; Mannosidases--metabolism--ME; Mannosyltransferases--metabolism--ME; Membrane Proteins--metabolism--ME; Molecular Sequence Data; *Pichia* --genetics--GE; Polysaccharides--metabolism--ME; *Saccharomyces cerevisiae*--enzymology--EN; *Saccharomyces cerevisiae*--genetics--GE; *Saccharomyces cerevisiae*...

5/3,K/5 (Item 1 from file: 5)

DIALOG(R)File 5:Biosis Previews(R)

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0015065263 BIOSIS NO.: 200400436052

**Protein glycosylation modification in *Pichia pastoris***

AUTHOR: Contreras Roland (Reprint); Callewaert Nico L M; Geysens Steven C J

AUTHOR ADDRESS: Merelbeke, Belgium\*\*Belgium

JOURNAL: Official Gazette of the United States Patent and Trademark Office  
Patents 1287 (2): Oct. 12, 2004 2004

MEDIUM: e-file

PATENT NUMBER: US 6803225 PATENT DATE GRANTED: October 12, 2004 20041012

PATENT CLASSIFICATION: 435-2542 PATENT ASSIGNEE: Flanders Interuniversity  
Institute for Biotechnology, Zwijnaarde, Belgium PATENT COUNTRY: USA

ISSN: 0098-1133 (ISSN print)

DOCUMENT TYPE: Patent

RECORD TYPE: Abstract

LANGUAGE: English

**Protein glycosylation modification in *Pichia pastoris***

ABSTRACT: The present invention provides genetically engineered strains of *Pichia* capable of producing proteins with reduced glycosylation. In particular, the genetically engineered strains of the...

...The genetically engineered strains of the present invention can be further modified such that the OCH1 gene is disrupted. Methods of producing glycoproteins with reduced glycosylation using such genetically engineered strains of *Pichia* are also provided.

DESCRIPTORS:

ORGANISMS: *Pichia pastoris* (Ascomycetes)

5/3,K/6 (Item 2 from file: 5)

DIALOG(R)File 5:Biosis Previews(R)

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0014652485 BIOSIS NO.: 200400023242

**Cloning and disruption of the PpURA5 gene and construction of a set of integration vectors for the stable genetic modification of Pichia pastoris.**

AUTHOR: Nett Juergen H; Gerngross Tillman U (Reprint)

AUTHOR ADDRESS: Thayer School of Engineering, Dartmouth College, 8000  
Cummings Hall, Hanover, NH, 03755, USA\*\*USA

AUTHOR E-MAIL ADDRESS: tillman.gerngross@dartmouth.edu

JOURNAL: Yeast 20 (15): p1279-1290 November 2003 2003

MEDIUM: print

ISSN: 0749-503X (ISSN print)

DOCUMENT TYPE: Article

RECORD TYPE: Abstract

LANGUAGE: English

**...gene and construction of a set of integration vectors for the stable genetic modification of Pichia pastoris.**

DESCRIPTORS:

ORGANISMS: Pichia pastoris (Ascomycetes...

GENE NAME: Pichia pastoris OCH1 gene (Ascomycetes...

... Pichia pastoris SEC65 gene (Ascomycetes...

... Pichia pastoris URA3 gene (Ascomycetes...

... Pichia pastoris URA5 gene (Ascomycetes)

5/3,K/7 (Item 3 from file: 5)

DIALOG(R)File 5:Biosis Previews(R)

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0014462031 BIOSIS NO.: 200300417693

**Molecular analysis of HpOCH1 and HpHOC1, two novel genes involved in cell wall integrity and N-linked glycosylation in the methylotrophic yeast Hansenula polymorpha.**

AUTHOR: Kim Moo Woong (Reprint); Kim Jeong-Yoon; Oh Yun Wi (Reprint); Rhee Sang Ki (Reprint); Kang Hyun Ah (Reprint)

AUTHOR ADDRESS: Metabolic Engineering Lab, KRIBB, Yusong-gu, Daejeon,  
305-600, South Korea\*\*South Korea

AUTHOR E-MAIL ADDRESS: hyunkang@kribb.re.kr

JOURNAL: Yeast 20 (Supplement 1): pS148 July 2003 2003

MEDIUM: print

CONFERENCE/MEETING: XXIst International Conference on Yeast Genetics and  
Molecular Biology Goeteborg, Sweden July 07-12, 2003; 20030707

ISSN: 0749-503X (ISSN print)

DOCUMENT TYPE: Meeting; Meeting Abstract

RECORD TYPE: Citation

LANGUAGE: English

**...HpHOC1, two novel genes involved in cell wall integrity and N-linked glycosylation in the methylotrophic yeast Hansenula polymorpha.**

DESCRIPTORS:

...ORGANISMS: methylotrophic yeast, thermotolerant

...GENE NAME: Saccharomyces cerevisiae OCH1 gene (Ascomycetes...

5/3,K/8 (Item 1 from file: 73)

DIALOG(R)File 73:EMBASE

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13866542 EMBASE No: 2006271736

**Functional characterization of the Hansenula polymorpha HOC1, OCH1, and OCR1 genes as members of the yeast OCH1 mannosyltransferase family involved in protein glycosylation**

Moo W.K.; Eun J.; Kim J.-Y.; Park J.-S.; Oh D.-B.; Shimma Y.-I.; Chiba Y.; Jigami Y.; Sang K.R.; Hyun A.K.

A.K. Hyun, Metabolic Engineering Laboratory, Korea Research Institute of Bioscience and Biotechnology, Oun-dong 52, Yusong-gu, Daejeon, 305-600 South Korea

AUTHOR EMAIL: hyunkang@kribb.re.kr

Journal of Biological Chemistry ( J. BIOL. CHEM. ) (United States) 10

MAR 2006, 281/10 (6261-6272)

CODEN: JBCHA ISSN: 0021-9258 eISSN: 1083-351X

DOCUMENT TYPE: Journal ; Article

LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

NUMBER OF REFERENCES: 36

**Functional characterization of the Hansenula polymorpha HOC1, OCH1, and OCR1 genes as members of the yeast OCH1 mannosyltransferase family involved in protein glycosylation**

The alpha-1,6-mannosyltransferase encoded by *Saccharomyces cerevisiae* OCH1 (ScOCH1) is responsible for the outer chain initiation of N-linked oligosaccharides. To identify the genes involved in the first step of outer chain biosynthesis in the methylotrophic yeast *Hansenula polymorpha*, we undertook the functional analysis of three *H. polymorpha* genes, HpHOC1, HpOCH1, and HpOCR1, that belong to the OCH1 family containing seven members with significant sequence identities to ScOCH1. The deletions of these H...

...hypermannosylation. Although the apparent phenotypes of Hpocr1DELTA were most similar to those of *S. cerevisiae* och1 mutants, the detailed structural analysis of N-glycans revealed that the major defect of Hpocr1DELTA...

...the O-linked glycosylation of extracellular chitinase, representing HpOCR1 as a novel member of the OCH1 family implicated in both N- and O-linked glycosylation. In contrast, addition of the first...

...growth of its wild type under normal growth conditions. The complementation of the *S. cerevisiae* och1 null mutation by the expression of HpOCH1 and the lack of in vitro alpha-1...

MEDICAL TERMS (UNCONTROLLED): och1 gene; hoc1 gene; ocr1 gene

5/3,K/9 (Item 2 from file: 73)

DIALOG(R)File 73:EMBASE

(c) 2006 Elsevier B.V. All rts. reserv.

12648159 EMBASE No: 2004249027

**Functional analysis of the ALG3 gene encoding the Dol-P-Man:**

**MansUB5GlcNAcSUB2-PP-Dol mannosyltransferase enzyme of *P. pastoris***

Davidson R.C.; Nett J.H.; Renfer E.; Li H.; Stadheim T.A.; Miller B.J.; Miele R.G.; Hamilton S.R.; Choi B.-K.; Mitchell I.T.; Wildt S.

S. Wildt, Glycofi Inc., 21 Lafayette Street, Lebanon, NH 03766 United States

AUTHOR EMAIL: swildt@glycofi.com

Glycobiology ( GLYCOBIOLOGY ) (United Kingdom) 2004, 14/5 (399-407)

CODEN: GLYCE ISSN: 0959-6658

DOCUMENT TYPE: Journal ; Article  
 LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH  
 NUMBER OF REFERENCES: 37

...the Golgi, where additional but divergent processing occurs in mammals and fungi. We cloned the *Pichia pastoris* homolog of the ALG3 gene, which encodes the enzyme that converts ManSUB5-GlcNAcSUB2Dol-PP to ManSUB6GlcNAcSUB2-Dol-PP. Deletion of this gene in an och1 mutant background resulted in the secretion of glycoproteins with a predicted ManSUB5GlcNAcSUB2 structure that could...  
 ...digests. These results contrast the far simpler glycan profile found in *Saccharomyces cerevisiae* alg3-1 och1, indicating diverging Golgi processing in these two closely related yeasts. Finally, analysis of the P

# MEDICAL DESCRIPTORS:

gene function; genetic code; *Pichia pastoris*; carbohydrate synthesis; molecular cloning; gene deletion; mutant; in vitro study; *Saccharomyces cerevisiae*; Golgi complex...

?

| Set | Items | Description                                   |
|-----|-------|---|
| S1  | 9     | (MANNOSIDASE) AND (OCH1)                      |
| S2  | 6     | RD (unique items)                             |
| S3  | 95    | OCH1  |
| S4  | 12    | S3 AND ((METHYLOTROPHIC (W) YEAST) OR PICHIA) |
| S5  | 9     | RD (unique items)                             |

?

S (MANNOSIDASE) AND ((METHYLOTROPHIC (W) YEAST) OR PICHIA)

8876 MANNOSIDASE  
 4100 METHYLOTROPHIC  
 307879 YEAST  
 1805 METHYLOTROPHIC (W) YEAST  
 11061 PICHIA

S6 89 (MANNOSIDASE) AND ((METHYLOTROPHIC (W) YEAST) OR PICHIA)

?

S S6 NOT PY>2000

89 S6  
 9480752 PY>2000  
 S7 46 S6 NOT PY>2000

?

RD

S8 21 RD (unique items)

?

S S8 AND (VECTOR OR PLASMID)

21 S8  
 318011 VECTOR  
 211924 PLASMID

S9 1 S8 AND (VECTOR OR PLASMID)

?

T S9/3,K/ALL

9/3,K/1 (Item 1 from file: 155)

DIALOG(R) File 155:MEDLINE(R)

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12027034 PMID: 9858640

**Cloning, expression, purification, and characterization of the acid alpha-mannosidase from Trypanosoma cruzi.**

Vandersall-Nairn A S; Merkle R K; O'Brien K; Oeltmann T N; Moremen K W  
Complex Carbohydrate Research Center and the Department of Biochemistry  
and Molecular Biology, University of Georgia, Athens, GA 30602, USA.

Glycobiology (ENGLAND) Dec 1998, 8 (12) p1183-94, ISSN 0959-6658--  
Print Journal Code: 9104124

Contract/Grant No.: GM47533; GM; NIGMS; RR05351; RR; NCRR

Publishing Model Print

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: MEDLINE; Completed

**Cloning, expression, purification, and characterization of the acid alpha-mannosidase from Trypanosoma cruzi.**

The acid alpha-mannosidase of Trypanosoma cruzi is a broad-specificity hydrolase involved in the catabolism of glycoconjugates, presumably in the digestive vacuole. We have cloned the alpha-mannosidase gene from a T.cruzi epimastigote genomic library. The alpha-mannosidase gene was determined to be single copy by Southern analysis, and similar sequences were not...

... digests of either Trypanosoma brucei or Leishmania donovani. The coding region was subcloned into the Pichia pastoris expression vector pPICZ, and alpha-mannosidase activity was detected in the medium of induced cultures. The recombinant alpha-mannosidase demonstrated a pH optimum, inhibition by swainsonine, Km, and substrate specificity consistent with the characteristics of the alpha-mannosidase previously purified from T.cruzi epimastigotes. The recombinant enzyme was purified 103-fold from the culture medium of Pichia pastoris and had a native molecular mass of 359 kDa by gel filtration. A combination...

... subunits. A polyclonal antibody raised to the recombinant enzyme was shown to immunoprecipitate the alpha-mannosidase from T.cruzi cell extracts and will be used in future immunolocalization studies.

...; H.S.; Sequence Analysis, DNA; Sequence Homology, Amino Acid; Substrate Specificity; Swainsonine--pharmacology--PD; alpha-Mannosidase Enzyme No.: EC 3.2.1. (Mannosidases); EC 3.2.1.24 (alpha-Mannosidase)

Chemical Name: Enzyme Inhibitors; Oligosaccharides; RNA, Messenger; Recombinant Proteins; Swainsonine; Mannosidases; alpha-Mannosidase  
?

| Set | Items | Description  |
|-----|-------|--|
| S1  | 9     | (MANNOSIDASE) AND (OCH1)                                 |
| S2  | 6     | RD (unique items)  |
| S3  | 95    | OCH1   |
| S4  | 12    | S3 AND ((METHYLOTROPHIC (W) YEAST) OR PICHIA)            |
| S5  | 9     | RD (unique items)  |
| S6  | 89    | (MANNOSIDASE) AND ((METHYLOTROPHIC (W) YEAST) OR PICHIA) |
| S7  | 46    | S6 NOT PY>2000   |
| S8  | 21    | RD (unique items)  |
| S9  | 1     | S8 AND (VECTOR OR PLASMID)                               |
| ?   |       |  |

S (MODIFICATION) (S) (GLYCOSYLATION)



353397 MODIFICATION  
 79658 GLYCOSYLATION  
 S10 3380 (MODIFICATION) (S) (GLYCOSYLATION)

?

S S8 AND S10

21 S8  
 3380 S10  
 S11 1 S8 AND S10

?

T S11/3,K/ALL

11/3,K/1 (Item 1 from file: 5)  
 DIALOG(R) File 5:Biosis Previews(R)  
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0011838147 BIOSIS NO.: 199900097807

**Modification of the protein glycosylation pathway in the methylotrophic yeast *Pichia pastoris***

AUTHOR: Martinet Wim; Maras Marleen; Saelens Xavier; Jou Willy Min;  
 Contreras Roland (Reprint)

AUTHOR ADDRESS: Unit Fundam. Appl. Mol. Biol., Dep. Mol. Biol., Flanders  
 Interuniv. Inst. Biotechnol. Univ. Ghent, K.L. Ledeganckstr. 35, B-9000  
 Ghent, Belgium\*\*Belgium

JOURNAL: Biotechnology Letters 20 (12): p1171-1177 Dec., 1998 1998

MEDIUM: print

ISSN: 0141-5492

DOCUMENT TYPE: Article

RECORD TYPE: Abstract

LANGUAGE: English

**Modification of the protein glycosylation pathway in the methylotrophic yeast *Pichia pastoris***

ABSTRACT: alpha-1,2- Mannosidase from *Trichoderma reesei* was used to modify the N-linked glycosylation pathway of the methylotrophic yeast *Pichia pastoris*. Expression of foreign influenza glycoproteins with more extensively processed N-linked oligosaccharides was observed when alpha-1,2- mannosidase was secreted in the culture medium. However, intracellular removal of mannose residues may stimulate mannosyltransferase...

...orthovanadate, commonly used to isolate glycosylation mutants of *Saccharomyces cerevisiae*, had no profound effect on *Pichia pastoris*.

...REGISTRY NUMBERS: alpha-1,2- mannosidase ;

DESCRIPTORS:

ORGANISMS: *Pichia pastoris* (Ascomycetes...)

CHEMICALS & BIOCHEMICALS: alpha-1,2- mannosidase ;

MISCELLANEOUS TERMS: ...protein glycosylation pathway...

... modification

?

| Set | Items | Description                                   |
|-----|-------|---|
| S1  | 9     | (MANNOSIDASE) AND (OCH1)                      |
| S2  | 6     | RD (unique items)                             |
| S3  | 95    | OCH1  |
| S4  | 12    | S3 AND ((METHYLOTROPHIC (W) YEAST) OR PICHIA) |

S5 9 RD (unique items)  
 S6 89 (MANNOSIDASE) AND ((METHYLOTROPHIC (W) YEAST) OR PICHIA)  
 S7 46 S6 NOT PY>2000  
 S8 21 RD (unique items)  
 S9 1 S8 AND (VECTOR OR PLASMID)  
 S10 3380 (MODIFICATION) (S) (GLYCOSYLATION)  
 S11 1 S8 AND S10  
 ?

S S8 AND (TRICHODERMA (W) REESEI)  
 21 S8  
 14668 TRICHODERMA  
 4020 REESEI  
 3946 TRICHODERMA(W)REESEI  
 S12 2 S8 AND (TRICHODERMA (W) REESEI)  
 ?

T S12/3,K/ALL

12/3,K/1 (Item 1 from file: 155)  
 DIALOG(R)File 155:MEDLINE(R)  
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12618655 PMID: 10682284

**Molecular cloning and enzymatic characterization of a *Trichoderma reesei* 1,2-alpha-D-mannosidase.**

Maras M; Callewaert N; Piens K; Claeysens M; Martinet W; Dewaele S; Contreras H; Dewerte I; Penttila M; Contreras R

Department of Molecular Biology, Flanders Interuniversity Institute for Biotechnology, Ghent, Belgium.

Journal of biotechnology (NETHERLANDS) Feb 17 2000, 77 (2-3) p255-63  
 , ISSN 0168-1656--Print Journal Code: 8411927

Publishing Model Print

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: MEDLINE; Completed

**Molecular cloning and enzymatic characterization of a *Trichoderma reesei* 1,2-alpha-D- mannosidase .**

A cDNA encoding 1,2-alpha-D- mannosidase mds 1 from *Trichoderma reesei* was cloned. The largest open reading frame occupied 1571 bp. The predicted sequence contains 523...

... from *Aspergillus saitoi* and *Penicillium citrinum* (51.6 and 51.0% identity, respectively). *T. reesei* mannosidase was produced as a recombinant enzyme in the yeast *Pichia pastoris*. Replacement of the N-terminal part with the prepro-signal peptide of the *Saccharomyces*...

... designed and the enzymatic properties were analyzed. The enzyme was characterized as a class-I mannosidase .

...; EN; DNA, Complementary; Mannosidases--chemistry--CH; Molecular Sequence Data; *Penicillium*--enzymology--EN; Peptides--genetics--GE; *Pichia*--enzymology--EN; *Pichia* --genetics--GE; Protein Sorting Signals--genetics--GE; Recombinant Fusion Proteins; Recombinant Proteins; Research Support, Non...

Enzyme No.: EC 3.2.1. (Mannosidases); EC 3.2.1.113 (mannosyl-oligosaccharide 1,2-alpha- mannosidase )

...Chemical Name: Sorting Signals; Recombinant Fusion Proteins; Recombinant Proteins; mating factor; Mannosidases; mannosyl-oligosaccharide 1,2-alpha- mannosidase

12/3,K/2 (Item 1 from file: 5)

DIALOG(R)File 5:Biosis Previews(R)

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0011838147 BIOSIS NO.: 199900097807

**Modification of the protein glycosylation pathway in the methylotrophic yeast *Pichia pastoris***

AUTHOR: Martinet Wim; Maras Marleen; Saelens Xavier; Jou Willy Min; Contreras Roland (Reprint)

AUTHOR ADDRESS: Unit Fundam. Appl. Mol. Biol., Dep. Mol. Biol., Flanders Interuniv. Inst. Biotechnol. Univ. Ghent, K.L. Ledeganckstr. 35, B-9000 Ghent, Belgium\*\*Belgium

JOURNAL: Biotechnology Letters 20 (12): p1171-1177 Dec., 1998 1998

MEDIUM: print

ISSN: 0141-5492

DOCUMENT TYPE: Article

RECORD TYPE: Abstract

LANGUAGE: English

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ABSTRACT: alpha-1,2- Mannosidase from *Trichoderma reesei* was used to modify the N-linked glycosylation pathway of the methylotrophic yeast *Pichia pastoris*. Expression of foreign influenza glycoproteins with more extensively processed N-linked oligosaccharides was observed when alpha-1,2- mannosidase was secreted in the culture medium. However, intracellular removal of mannose residues may stimulate mannosyltransferase...

...orthovanadate, commonly used to isolate glycosylation mutants of *Saccharomyces cerevisiae*, had no profound effect on *Pichia pastoris*.

...REGISTRY NUMBERS: alpha-1,2- mannosidase ;

DESCRIPTORS:

ORGANISMS: *Pichia pastoris* (Ascomycetes...

... *Trichoderma reesei* (Fungi Imperfecti or Deuteromycetes)

CHEMICALS & BIOCHEMICALS: alpha-1,2- mannosidase ;

?

| Set | Items | Description  |
|-----|-------|--|
| S1  | 9     | (MANNOSIDASE) AND (OCH1)                                 |
| S2  | 6     | RD (unique items)  |
| S3  | 95    | OCH1   |
| S4  | 12    | S3 AND ((METHYLOTROPHIC (W) YEAST) OR PICHIA)            |
| S5  | 9     | RD (unique items)  |
| S6  | 89    | (MANNOSIDASE) AND ((METHYLOTROPHIC (W) YEAST) OR PICHIA) |
| S7  | 46    | S6 NOT PY>2000   |
| S8  | 21    | RD (unique items)  |
| S9  | 1     | S8 AND (VECTOR OR PLASMID)                               |
| S10 | 3380  | (MODIFICATION) (S) (GLYCOSYLATION)                       |
| S11 | 1     | S8 AND S10   |
| S12 | 2     | S8 AND (TRICHODERMA (W) REESEI)                          |
| ?   |       |  |

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\$1.98 9 Type(s) in Format 3  
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\$12.40 4 Type(s) in Format 3  
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